

MEMORANDUM FOR: Hydro Program files

FROM: Brian J. Brown, Assistant Regional Administrator for Hydro

SUBJECT: Response to comanagers' comments on the draft 2000 Supplemental FCRPS Biological Opinion dated December 23, 1999

This memo addresses NMFS' response to comments submitted by USFWS, ODFW, WDFW, and CRITFC on the draft 2000 Supplemental Biological Opinion. Although NMFS expected to receive comments from CRITFC and possibly UCUT, these had not been received as of the date of this memo or the date the 2000 Supplemental BiOp was signed (February 4, 2000).

The following comments and responses are organized by sections of the draft biological opinion to which they apply.

## **PROPOSED ACTION**

### **Operation of the FCRPS by the Action Agencies**

#### Interim Period

*Comment 1:* The definition of the interim period is unclear. The NMFS implies that the interim period ends when the 2000 FCRPS Biological Opinion (2000 BiOp) is signed but the critical uncertainties that NMFS identifies will not be resolved by then.

*Response:* Because the 1999 FCRPS BiOp is a supplement to the 1995 and 1998 BiOps, the interim period will end when these three documents are replaced by a new biological opinion. The Action Agencies reinitiated consultation on the effects of long-term FCRPS operations on all listed Columbia basin salmonids with their Biological Assessment dated December 17, 1999. The NMFS currently expects to complete consultation and to issue its new biological opinion, which will review the best available scientific information regarding the effects of the FCRPS on all 12 listed species of salmonids (including the six addressed in the 2000 Supplemental BiOp), during May 2000. Assuming that critical uncertainties remain for some of the species listed in 1999, which NMFS agrees is likely, NMFS may describe a new interim period in which these uncertainties can be resolved without jeopardizing the

survival of the species of concern.

*Comment 2:* The NMFS should state that the 2000 Supplemental BiOp does not place any additional requirements on the FCRPS beyond those set in the 1995 and 1998 BiOps.

*Response:* The 2000 Supplemental BiOp requires that the Action Agencies minimize fluctuations in Bonneville Dam discharge which can dewater spawning areas and incubating redds. Otherwise, operations specified in the 2000 Supplemental BiOp are revenue neutral, per the 1995 Memorandum of Agreement among the Department of the Army, the Department of Commerce, the Department of Energy, and the Department of Interior (titled “Bonneville Power Administration’s Financial Commitment for Columbia River Basin Fish and Wildlife Costs,” September 1996). As W. Stelle (NMFS), wrote to J. Greer (ODFW) in a letter dated November 17, 1999, with the cooperation of the Action Agencies, there have been some increases in the level of power system impacts since that agreement. These include the effects of additional spill and improvements to the flow augmentation program implemented through the 1998 steelhead supplement, and the portion of the below-Bonneville spawning and incubation period that has been implemented each year since 1997.

#### Ives Island

*Comment 3:* In SOR 99-28, the comanagers recommended that the Action Agencies provide a Bonneville discharge of 140 kcfs starting November 1 for chum salmon spawning, not 125 kcfs. The flow levels recommended in SOR 99-28 are based on the species’ biological requirements, NMFS’ recommendations are not.

*Response:* The NMFS respectfully disagrees. The NMFS’ guidance to the Action Agencies for the 1999 spawning operation, described in our letter dated October 14, 1999, and further described in the 2000 Supplemental BiOp, is based on data provided by the comanagers in the “Fact Sheet” attached to SOR 99-28 (see copy attached to this memo). This table describes the proportion of spawning habitat accessible to chum salmon at various levels of Bonneville outflow, based on the comanager’s observations during the 1998 pilot study. The table specifies that 50% of the available chum salmon spawning habitat in the Ives Island area is likely to be available at a Bonneville discharge of 125 kcfs.

The NMFS recognizes that this preliminary estimate has been superseded by observations obtained during the fall 1999 field season. The updated estimates are being taken up in consultation on the 2000 BiOp (reinitiated with receipt of the Action Agencies’ Biological Assessment on December 17, 1999). This new information will be considered as NMFS develops its recommendation for an Ives Island spawning operation for fall 2000. However, the best scientific information available to NMFS by October 1999 was the data in the fact sheet attached to SOR 99-28. The comanagers’ system operation request was an interpretation of that data and was not accompanied by any text describing why their interpretation differed from the estimates in the attached table.

*Comment 4:*

- The NMFS should not allow a  $\pm 5$  kcfs range around a daily 125 kcfs average Bonneville discharge. This operation was implemented during the 1999 spawning season on an experimental basis to allow the Action Agencies some flexibility in providing the flow, but it did not work. The NMFS should establish a narrower operating range during spawning and incubation.
- Rarely in 1999 was there enough contribution from tidal effect or Willamette backwater that a Bonneville discharge of 125 kcfs could provide a spawning flow at Ives Island.
- At 125 kcfs, only 10% of the fall chinook salmon and 30% of the chum salmon habitat were available.
- In order to maintain the required depth for chum spawning at the index chum redd, an elevation of 3.5 ft must be maintained at Ives Island gage 1.
- Based on observations during the 1999 field season, a spawning flow of  $125 \pm 5$  kcfs precludes use of most of the spawning area. Instantaneous flows should be maintained for spawning without fluctuations unless the flows are higher than 170 kcfs.
- On November 2, Bonneville Project operations were implemented as proposed in the draft 2000 Supplemental BiOp. Field crews observed and documented dewatered redds at the mouth of Hamilton Creek and chinook salmon trapped and stranded in pools. Chum salmon were seen at the same time in the same area.

*Response:* The comments bulleted above all provide “new information” obtained during the 1999 spawning season (i.e., relative to NMFS recommendations in its letter to the Action Agencies dated October 14, 1999, and the agencies’ proposed action in the 2000 Supplemental BiOp). The new information is being evaluated as part of the Federal consultation on the 2000 BiOp and will be taken up as NMFS develops its recommendation for an Ives Island spawning operation for fall 2000.

*Comment 5:* Under the discussion of the reservoir refill hydroregulation study (Section III.A.2), the Action Agencies propose to present results “in a form that shows the effects of each flow alternative on the following parameters: (1) the Bonneville flow request, (2) Grand Coulee refill to upper rule curve, by April 15, (3) the Vernita Bar flow requirement, and (4) flows at Wanapum Dam exceed 100 kcfs (or 70 kcfs daytime) during the fall spawning period.” The fourth output parameter should be changed to “(4) when inflow to Wanapum Project exceeds 125 kcfs daily average during the fall spawning period” in order to agree with the terms of the Vernita Bar Settlement Agreement.

*Response:* The commenter has identified a parameter that, specified as an additional output, would provide useful information about the likely effects of the proposed Ives Island spawning operation on other fish protection measures given the state of reservoir storage at the start of the operation. However, rather than substituting the language in the draft 2000 BiOp with that recommended by the commenter, the NMFS will recommend that the following two parameters be reported in the fall 2000 study: (4) the frequency of occurrence of daily average inflows to Wanapum Project exceeding 100 kcfs (assumes 70 kcfs during daytime) during the fall spawning period, and (5) the frequency of occurrence of daily inflows to Wanapum Project exceeding 125 kcfs (maximum daily average flows addressed by the Vernita Bar agreement) during the fall spawning period.

*Comment 6:* NMFS' flow recommendation does not address the biological requirements of LCR (tule) fall chinook.

*Response:* The NMFS discusses the effects of the proposed operation, which does not include an operation to provide LCR fall chinook with access to the Ives Island area, in Section VI.A.1 of the 2000 Supplemental BiOp. As described, the NMFS weighed the possible detrimental effect of not ensuring LCR chinook salmon access to Ives Island habitat against the expected benefit of managing stored water to provide a high likelihood of improving conditions in the migration corridor during spring and summer for juveniles of all 12 listed species. The NMFS determined that it was reasonable to collect more information during the interim period to determine whether fall flow augmentation is a biological requirement of LCR chinook salmon. However, NMFS did make a conservation recommendation that the Action Agencies (Section IX) provide access to Ives Island spawning habitat beginning October 1, if the operation can be sustained without adverse effect on the operations specified in the 1995 RPA and 1998 supplemental biological opinion.

Information that NMFS expects to obtain during the interim period will include the analyses provided as part of our NWFSC's Cumulative Risk Initiative (CRI) and Viable Salmonid Population (VSP) analysis for LCR chinook salmon, as well as additional information regarding the wild versus natural origin of the Ives Island spawners. The CRI analysis will estimate the risks of extinction 10- and 100-years into the future, respectively. The VSP analysis will assess the importance of mainstem spawning to the viability of the ESU. All of this information will be considered in NMFS' recommended long-term FCRPS operation to ensure survival with adequate potential for recovery for LCR chinook salmon.

*Comment 7:* The NMFS should identify an operation to minimize load following operations during emergence and rearing.

*Response:* In the 2000 Supplemental BiOp, the Action Agencies propose to manage storage with natural flows to maintain the daily average target discharge during incubation and emergence that protects the highest redd established by the operation and that maintains connectivity between spawning habitat and the mainstem for outmigrants:

“If storage is managed such that the daily average Bonneville outflow is between 125 kcfs and 134 kcfs during spawning, a discharge of  $125 \pm 5$  kcfs will be maintained through incubation and emergence. For all spawning flows 135 kcfs and above, the highest spawning flow minus 10 kcfs will be the managed daily average during incubation and emergence. In each case, a “bandwidth” equivalent to the managed daily average discharge  $\pm 5$  kcfs will be allowed. The highest managed daily average discharge that will be provided during the incubation and emergence period is 150 kcfs.”

The NMFS recommended this operation to support chum salmon incubation and emergence based on information provided by the comanagers in the fact sheet attached to SOR 99-28.

*Comment 8:* The NMFS should describe the Action Agencies’ attempts to date to secure more water.

*Response:* These efforts are described in Section VI.A.1.b.1) of the 2000 Supplemental BiOp.

*Comment 9:* Regarding the Upper Willamette River ESUs, the 2000 Supplemental BiOp should include the flow recommendations developed by ODFW for the interim operations.

*Response:* The NMFS believes that the commenter is referring to the ODFW’s flow recommendation to the Corps for the mainstem Willamette River. As stated in Section VI.A.1.c.2), the Corps is addressing these operations in a separate consultation with NMFS. The scope of the 2000 Supplemental BiOp only includes effects of FCRPS operations in the mainstem Columbia and Snake rivers.

*Comment 10:* Drafting reservoir levels significantly below flood control rule curves in winter could affect the ability to support Vernita Bar protection flows, but this could be dealt with inseason – e.g., the Grand Coulee drumgate work in 1998.

*Response:* The commenter correctly pointed out that NMFS’ recommendation regarding whether or not to provide the Ives Island spawning flows relies heavily on the modeling study performed in September of each year. The NMFS’ recommendation for a fall 2000 Ives Island operation should include the following as a second condition under which the operation would be considered “feasible”:

“(2) inseason data, as the spawning season progresses, on reservoir elevations and forecasted inflow, indicate that the operation can be provided without adverse effect on the same operations.”

In this context, the phrase “the same operations” would refer to those specified as the first condition under which the operation would be considered feasible (i.e., if the best hydrologic data available by mid-September indicate that precipitation, runoff, and reservoir storage are likely to support the

operation from the start of spawning, late October or early November, until the end of emergence without adverse effect on implementation of the 1995 RPA, the 1998 supplemental biological opinion, or the ability of parties to comply with the Vernita Bar agreement). This was not an issue for the fall 1999 operation; because reservoirs were full and meteorological conditions indicated a good water year, the September study indicated that the likelihood of adverse effect on biological opinion- and Vernita Bar operations was relatively low. However, any improvement or deterioration of conditions between mid-September and late October, for example, is likely to be an issue in other water years.

*Comment 11:* The NMFS should consider the analysis by the Fish Passage Center, conveyed via FPAC on December 13, 1999, as a tool that would allow protection measures to be defined in more direct terms (i.e., water elevation over Ives Island habitat rather than Bonneville outflows).

*Response:* The NMFS is interested in further review of the Fish Passage Center's analysis (attached to this memo). Outstanding questions include potential sources of covariance among the independent variables. The NMFS will assess the FPC's approach as we develop our recommendation for the fall 2000 Ives Island operation.

#### Additional Water

*Comment 12:*

- The 2000 Supplemental BiOp should identify and secure additional sources of water. It should include specific operations for CR chum salmon spawning and incubation that are in addition to the flow augmentation measures in the 1995 and 1998 BiOps. The NMFS should establish tough penalties and requirements for reinitiation of consultation for failure to secure this additional water.
- The NMFS should address changes to flood control elevations, winter draft limits, use of Treaty and Non Treaty Storage water, and possible changes to refill probabilities.

*Response:* All of these issues are being taken up in consultation on the 2000 BiOp, which was reinitiated with receipt of the Action Agencies' biological assessment on December 17, 1999.

#### **Analytical Techniques and Data for Consultation on the Long-Term Configuration and Operation of the FCRPS**

*Comment 13:* Given the low numbers of chum salmon that pass Bonneville Dam each year, the usefulness of spawning surveys in tributaries to Bonneville pool may be limited. It may be more effective to radio-tag and track fish captured in the trap in the Washington Shore ladder. These studies could be combined with WDFW's ongoing evaluation of Bonneville pool winter steelhead.



*Response:* The NMFS believes that this suggestion has merit and will take it up during consultation on the 2000 BiOp.

*Comment 14:* Any study proposals resulting from the 2000 Supplemental BiOp should go through the full review process for BPA direct-funded projects or through the Corps' Anadromous Fish Evaluation Program (AFEP) process. In many cases, additional activities could be accommodated within the existing Ives Island study.

*Response:* The NMFS' conclusion that the proposed operation does not jeopardize the survival of listed salmonids for the rest of the interim period is, in part, based on the assumption that the studies outlined in Section III.B will take place. Thus, these studies are not optional or discretionary. Therefore, financial support cannot be subject to the prioritization processes required by the BPA direct-funded or AFEP programs. However, NMFS will ensure that all scoping documents and proposals are reviewed by the comanagers through the Regional Forum.

Whereas NMFS cannot require that the Action Agencies contract with any specific entity, we agree that additional activities could be accommodated within the existing Ives Island study and that this would be the most efficient and effective means of ensuring coordination of a number of related tasks. Therefore, NMFS will recommend that the Action Agencies consider this approach.

*Comment 15:* Habitat modification in the Ives Island area would be extremely risky because of the flows and complexity of chum salmon spawning preferences. Chum salmon prefer to spawn where upwelled water percolates through the redds. There is a high risk that such modification would not duplicate all of the conditions that are necessary to attract spawning chum.

*Response:* The NMFS agrees that habitat modification would carry risk. The study called for in the 2000 Supplemental BiOp may, in fact, demonstrate that this approach is not feasible or that the attendant risks are not acceptable. However, given the extreme difficulty of providing optimum conditions for all 12 listed species of salmonids, plus bull trout and sturgeon, while meeting tribal trust responsibilities and negotiating with a sovereign nation (Canada) for access to more of the annual runoff stored in Canadian reservoirs, it is reasonable to ask the question "can the biological requirements of the lower river ESUs be met in another way without an unacceptable level of ecological risk?" As described in Section III of the 2000 Supplemental BiOp, the feasibility study will consider institutional issues of property ownership and land uses designations; the likelihood that modified habitat would withstand high flows (e.g., under mainstem and local tributary flood conditions); maintenance, rehabilitation, and removal costs; and potential adverse effects on existing fish and wildlife habitat. The NMFS welcomes additional suggestions regarding specific risks that should be added to the scope of the study.

*Comment 16:* The NMFS should require that the proposed feasibility studies for habitat modification be subject to review and approval by the comanagers and tribes.

*Response:* The NMFS will ensure that scoping documents and proposals for the habitat modification feasibility study are reviewed by the comanagers through the Regional Forum. And, in accordance with Regional Forum procedures, NMFS will work toward consensus. Any decision that NMFS believes runs counter to the views of the comanagers will be documented and explained in writing.

## **BIOLOGICAL INFORMATION**

### Current Range-Wide Status

*Comment 17:* How did NMFS conclude “no jeopardy” on the channel deepening when lack of information appears to be a serious constraint in providing additional protection measures for these fish?

*Response:* In its Biological Opinion and Conference Report on the Columbia River Federal Navigation Channel Deepening (dated December 16, 1999), the NMFS concluded that the research, monitoring, ecological restoration, and physical protections included in the Corps’ proposed action were likely to exceed, with an adequate margin of safety, those habitat values that might be lost. Although the channel deepening could adversely modify critical and proposed essential fish habitat in the Columbia River estuary and nearshore ocean, the entirety of the proposed action, including research and restoration measures, probably will not appreciably diminish the value of critical habitat with respect to the survival of listed salmonids with adequate potential for recovery.

The NMFS has made a similar determination in the 1999 FCRPS BiOp. The proposed action in its entirety, including interim protection measures and research to resolve critical uncertainties, is not likely to appreciably diminish the value of critical habitat in the mainstem Columbia River with respect to the survival of the newly listed species with adequate potential for recovery.

*Comment 18:* A flood this last December (1999) wiped out the Gorley Springs spawning channel in the Grays River drainage, where about 700 adult chum salmon had already spawned. It is likely that these redds were lost, equivalent to about 25% of the total Grays River chum spawning population . . . Although the chum salmon ESU has persisted, a catastrophic event like the Gorley Springs washout can change that in an instant . . . This also underlies the importance of protecting all spawning and rearing habitat for these fish.

*Response:* The NMFS is considering this information, and its implications for the viability of the ESU, during consultation on the 2000 BiOp.

## ANALYSIS OF EFFECTS

*Comment 19:* The NMFS should not defer a quantitative jeopardy analysis until the 2000 BiOp because (1) chum are at a critically low level (less than 1% of historical abundance), (2) the 2000 BiOp may not be completed in time to affect the fall operation, and (3) there is adequate information available to determine the spawning flow needs of chum salmon based on the comanagers' research study. The NMFS (October 14, 1999, letter from Stelle to the Action Agencies) agreed that flows provided in 1999 are inadequate for the long-term survival and recovery of CR chum salmon.

*Response:* The NWFSC's CRI analysis for CR chum salmon is expected to provide a quantitative estimate of the risk of extinction 10 years and 100 years into the future, respectively. This information will be taken into consideration in NMFS' recommendation for an Ives Island spawning operation during fall 2000. The NMFS agrees with the commenter that there is probably enough new information, developed during the 1999 spawning season, to suggest that chum salmon would benefit from further changes to the operation for fall 2000. This is considered new information (as discussed above) and is being considered during consultation on the 2000 BiOp, reinitiated with receipt of the Action Agencies' biological assessment on December 17, 1999. Finally, even if the 2000 BiOp is not completed and signed before the fall operation begins, NMFS will make a recommendation to the Action Agencies by letter, as we did in October 1999.

With respect to the October 14, 1999, letter from Stelle to the Action Agencies, NMFS wrote that it "expects that the operation proposed in this letter will not, on its own, ensure an adequate potential for recovery of CR chum salmon." In fact, that sentence would have been better stated as "the operation will not, on its own, ensure the recovery of CR chum salmon." In fact, the NMFS questions whether even maximizing use of the Ives Island spawning area would ensure recovery. Although we do not wish to prejudge the results of NWFSC's ongoing quantitative analyses, a recovery plan for CR chum salmon is expected to require habitat work in a number of tributaries to the lower Columbia River, both above and below Bonneville Dam. As much of this habitat is on or is affected by activities on private land, we will be looking to the states of and local jurisdictions in Oregon and Washington to support the necessary recovery measures.

*Comment 20:* The NMFS argues that additional protection is not needed for chum. The average November Bonneville discharge during 1974 through 1998 was greater than 125 kcfs.

*Response:* The commenter correctly points out a problem with NMFS' analysis of effects in the draft 2000 Supplemental BiOp. However, we disagree that a minimum instantaneous discharge of 120 kcfs during fall 1999 did not provide any protection to CR chum salmon above that provided in the last 25 years. Bonneville Dam has routinely been operated as a load-following project with substantial variations in discharge rates on hourly, daily, and weekend/weekday scales. These variations have resulted in daily ranges in discharge much larger than the  $\pm 5$  kcfs recommended by NMFS. For example, according to data provided by BPA (spreadsheet titled \bonflow.xls, attached to this memo),

the median daily range (i.e., median of daily maxima minus daily minima) during November was 45 kcfs in 1994, 60 kcfs in 1995, 49 kcfs in 1996, and 51 kcfs in 1997, the four years preceding operations to support Ives Island spawning. The NMFS believes that its recommendation of a target daily average discharge  $\pm 5$  kcfs for fall 1999 represented a significant improvement over these unregulated flows. However, given data collected during November 1999, regarding the efficacy of the November 1999 target(s) and of the operations that were intended to stay within  $\pm 5$  kcfs (median daily range was 19 kcfs, principally due to operations during the second half of the month), we will be considering a modified operation for fall 2000 during consultation with the Action Agencies on the 2000 BiOp.

*Comment 21:* It is inappropriate to weigh the benefit of managing water for juvenile migrants of all listed species against that for spawning of chum salmon. To avoid trading protection measures for one listed species for those of another, the supplemental BiOp should identify water sources and operations for chum salmon spawning that are in addition to flows currently allocated for juvenile migrants.

*Response:* The issues the commenter describes, additional sources of water and/or operational flexibility have been taken up in consultation on the 2000 BiOp. However, given the magnitude of potential effect on 1995 and 1998 BiOp operations, the NMFS believes that it is appropriate and responsible to weigh uncertainties against known benefits unless and until these additional sources of water and/or further operational flexibility are identified.

*Comment 22:* The section describing the effects of water regulation should include a discussion of the effects of flow fluctuations below projects as a result of power operations.

*Response:* The NMFS has added the suggested language in Section VI.A.1.a.

*Comment 23:* Regarding Section VI.A.3.b.1) – Reduction of Adverse Combined Effects, the ISAB did not recommend a specific proportion of transportation versus in-river passage, but neither did they recommend that “the majority of migrants of any salmon or steelhead spawning population would not be transported” (emphasis added). In fact, for Snake River fish, the vast majority are transported but the collector dams are not operated to maximize transportation. This statement should be corrected.

*Response:* The commenter correctly identified an error in the draft 2000 Supplemental BiOp. The language in question has been changed to read “. . . concerns regarding the lack of information on population-specific effects of transportation, relative to in-river migration under current conditions, prompted the Independent Scientific Advisory Board (ISAB 1998) to recommend a ‘spread-the-risk’ policy. In the 1998 supplemental biological opinion, NMFS addressed this recommendation by increasing spill at collector projects.”

*Comment 24:* In the discussion about the McNary project, the intent of the 1998 BiOp was to evaluate spring transportation in 1999 or future years. Transportation is presently a measure at McNary for spring migrants. The proposed study was to evaluate the effects of transportation on UCR steelhead, which would “allow future transportation” if the results are positive.

*Response:* The commenter correctly identified an ambiguous statement in the draft 2000 Supplemental BiOp. The language in question has been changed to read “The 1995 RPA Measure 3 would also be modified to allow an experiment involving spring transportation from McNary Dam in 1999 or future years.”

## **CRITICAL HABITAT**

*Comment 25:* The NMFS should add the following two features to its list of essential characteristics of critical habitat: (5) alteration of runoff patterns and (6) short-term fluctuations in flow downstream that result in stranding of juvenile fish.

*Response:* The commenter correctly identifies an omission in Section VII. The statement in the first paragraph only addresses the essential features of critical habitat in the migration corridor. The NMFS has therefore added the following language:

“Operation of the FCRPS may affect essential features of their spawning and rearing habitat [i.e., the newly listed species] by altering the runoff patterns and baseflows that would otherwise (1) provide access to some quantity of spawning habitat and (2) maintain connectivity between spawning habitat and the mainstem migration corridor.”

## **CONSERVATION RECOMMENDATIONS**

*Comment 26:* The NMFS should correct an inaccuracy in the text regarding LCR chinook salmon. There were several days in October when the Action Agencies did not provide a 125 kcfs day average.

*Response:* The commenter has correctly identified an error in the text. The Action Agencies provided a minimum daily average Bonneville discharge of 125 kcfs beginning October 5, the first day that LCR chinook salmon were reported in the Ives Island area. The daily average was greater than or equal to 125 kcfs during the rest of October with the following exceptions: 124.8 kcfs on October 20 and 25 and 124.3 kcfs on October 31. However, the NMFS believes that this text is extraneous to the discussion of when the flow augmentation program should start and, rather than correct it, has removed it from the text.

**INCIDENTAL TAKE STATEMENT**

*Comment 27:* It would be useful if NMFS would specifically describe how this ITS supplements or changes the 1995 and 1998 BiOps or establishes additional measures.

*Response:* The ITS in the 2000 Supplemental BiOp supplements those in the 1995 and 1998 BiOps by adding estimates of the expected levels of incidental take for juveniles and adults of the six species listed in March 1999. The only other change to the 1995 and 1998 statements is the addition of a measure to reduce the mortality of juvenile CR chum salmon due to exposing sac fry to total dissolved gas concentrations greater than 105% at the level of the redds. Because the ITS in the 2000 Supplemental BiOp supplements (adds to) those in the 1995 and 1998 statements, all of the terms and conditions to reduce incidental take in those BiOps continue in full effect for the rest of the interim period.